



PTO/SB/08a/b (08-03)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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Substitute for form 1449A/B/PTO				<b>Complete if Known</b>	
				Application Number	10/817,527
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (Use as many sheets as necessary)				Filing Date	April 1, 2004
				First Named Inventor	Daniel Krahmer, et al.
				Art Unit	N/A 2872
				Examiner Name	Not Yet Assigned JUBA
Sheet	1	of	2	Attorney Docket Number	01641/100M577-US1

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
JB	AA**	US-2003/0011896-A1	01-16-2003	Shiraishi	
JB	AB**	US-2003/0011893-A1	01-16-2003	Shiraishi et al.	
JB	AC**	US-2003/0000453-A1	01-02-2003	Unno et al.	
JB	AD**	US-2003/0012724-A1	01-16-2003	Bumett et al.	
JB	AE**	US-2003/0021026-A1	01-30-2003	Allan et al.	
JB	AF**	US-2003/0053036-A1	03-20-2003	Fujishima et al.	
JB	AG**	US-2003/0058421-A1	03-27-2003	Omura et al.	
JB	AH**	US-6,201,634-B1	03-13-2001	Sakuma et al.	
JB	AI**	US-6,324,003-B1	11-27-2001	Martin	

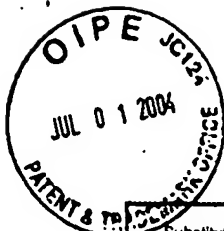
\*\* Pursuant to the Notice issued by the United States Patent and Trademark Office dated July 11, 2003 waiving the requirements of 37 C.F.R. § 1.98(a)(2)(i), a copy/copies of the United States Patent on PTO/SB08 is/are not being submitted.

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>3</sup>
		Country Code <sup>4</sup> -Number <sup>5</sup> -Kind Code <sup>6</sup> (if known)	MM-DD-YYYY			
JB	BA	WO-01/01182-A1	01-04-2001	Corning Incorporated	}	}
	BB	WO-01/50171-A1	07-12-2001	Carl Zeiss		
	BC	WO-02/093209-A2	11-21-2002	Carl Zeiss Semiconductor Manufacturing Technologies AG		
JB	BD	WO-02/099500-A2	12-12-2002	Optical Research Associates		
	BE	WO-03/009017-A1	01-30-2003	Nikon Corporation		
	BF	WO-03/023481-A1	03-20-2003	Nikon Corporation		
	BG	JP-11-106296-A1	04-20-1999	Mitsui Chem Inc.		
	BH	DE-40 22 904-A1	01-23-1992	Siemens AG		

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. \*\*CITE NO.: Those patent(s) or publication(s) which are marked with a double asterisk (\*\*) next to the Cite No. are not supplied because they were previously cited by or submitted to the Office in a prior application relied upon in this application for an earlier filing date under 35 U.S.C. 120. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

NON PATENT LITERATURE DOCUMENTS				
Examiner Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.		T <sup>2</sup>
JB	CA	Burnett, J.H., et al., "Intrinsic birefringence in calcium fluoride and barium fluoride", Physical Review B, Vol. 64, No. 24, December 15, 2001, pp. 241102-1 - 241102-4, XP-002218846.		
JB	CB	Pastmak, J, et al., "Optical anisotropy of Silicon Single Crystals", Physical Review B (Solid State), April 15, 1971, Vol. 3, No. 8, pp. 2567-2571, XP-001109107.		
JB	CC	Van Peski, Chris; Memo to PAG Members, "Re: Birefringence of calcium fluoride", May 7, 2001, XP-002218847.		-
JB	CD	Van Peski, Chris; Memo to Exposure Tool Manufacturers and Lens Designers, "Re: Birefringence of Calcium Fluoride", May 7, 2001, XP-002218848.		

Examiner Signature		Date Considered	11 APRIL 2005
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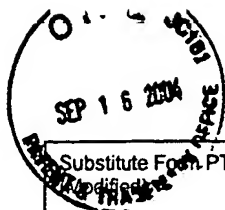
Substitute for form 1449A/B/PTO		<b>Complete if Known</b>			
		Application Number	10/817,527		
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (Use as many sheets as necessary)		Filing Date	April 1, 2004		
		First Named Inventor	Daniel Krahmer, et al.		
		Art Unit	N/A 2872		
		Examiner Name	Not Yet Assigned JUBA		
Sheet	2	of	2	Attorney Docket Number	01641/100M577-US1

BB	CE	Burnett, J.H., et al., "Intrinsic Birefringence in 157nm Materials" at 2nd International Symposium on 157nm Lithography in Dana Point, California, May 15, 2001, XP-002218849.	}
BB	CF	Burnett, J.H., et al., "Symmetry of spatial-dispersion-induced birefringence and its implications for CaF2 ultraviolet optics", J. Microlith., Microfab., Micosyste., Vol. 1, no. 3, October 3, 2002, pp. 213-224.	
BB	CG	Relation between US20030011893 A1, US20030011896 A1 and WO 02093209.	

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<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>Applicant is to place a check mark here if English language Translation is attached.

Examiner Signature		Date Considered	11 APRIL 2005
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Substitute Form PTO-1449 (Revised 11/01/03)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 17979-006002	Application No. 10/817,527
<b>Information Disclosure Statement by Applicant</b> (Use several sheets if necessary)  (37 CFR §1.98(b))		Applicant <b>Daniel Krahmer et al.</b>	
		Filing Date <b>April 1, 2004</b>	Group Art Unit <b>2872</b>

U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
DB	AA	6,201,634	03/13/01	Sakuma et al.			
DB	AB	6,324,003	11/27/01	Martin			
DB	AC	US 2003-0000453	01/02/03	Unno et al.			
DB	AD	US 2003-0012724	01/16/03	Burnett et al.			
DB	AE	US 2003-0011893	01/16/03	Shiraishi et al.			
DB	AF	US 20030011896	01/16/03	Shiraishi			
DB	AG	US 2003-0021026	01/30/03	Allan et al.			
DB	AH	US 20030025894	02/06/03	Owa et al.			
DB	AI	US 2003-0053036	03/20/03	Fujishima et al.			
DB	AJ	US 2003-0058421	03/27/03	Omura et al.			
DB	AK	US 2003/0086071	05/08/03	McGuire, Jr.			
DB	AL	US 2003/0086156	05/08/03	McGuire, Jr.			
DB	AM	US 2003/0086157	05/08/03	McGuire, Jr.			
DB	AN	US 2003/0086171	05/08/03	McGuire, Jr.			
DB	AO	US 2003/0099047	05/29/03	Hoffman et al.			
DB	AP	US 2003/0234981	12/25/03	Hoffman et al.			
DB	AQ	US 2004/0001244	01/01/04	Hoffman et al.			
DB	AR	6,683,710	01/27/04	Hoffman et al.			
DB	AS	US 2004/0036961	02/26/04	McGuire, Jr.			
DB	AT	US 2004/0036971	02/26/04	McGuire, Jr.			
DB	AU	US 2004/0036985	02/26/04	McGuire, Jr.			
DB	AV	US 2004/0145806	07/29/04	McGuire, Jr.			

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Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 17979-006002	Application No. 10/817,527
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		Filing Date April 1, 2004	Group Art Unit 2872

U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
DB	AW	6,775,063	08/10/04	Shiraishi			

Foreign Patent Documents or Published Foreign Patent Applications								
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No
dupl. DB	AX	DE 40 22 904	01/23/92	Germany			ABS.	
dupl. DB	AY	JP 11-106296	04/20/99	Japan			ABS.	
dupl. DB	AZ	WO 01/01182	01/04/01	WIPO				
dupl. DB	AAA	WO 01/50171	07/12/01	WIPO			ABS.	
dupl. DB	ABB	WO 02/093209	11/21/02	WIPO			ABS.	
DB	ACC	WO 02/097508	12/05/02	WIPO			ABS.	
dupl. DB	ADD	WO 02/099500	12/12/02	WIPO				
dupl. DB	AEE	WO 03/009017	01/30/03	WIPO			ABS.	
dupl. DB	AFF	WO 03/023481	03/20/03	WIPO			ABS.	
DB	AGG	WO 03/038479	05/08/03	WIPO				
DB	AHH	WO 03/046634	06/05/03	WIPO			ABS.	
DB	AII	WO 04/019077	03/04/04	WIPO				

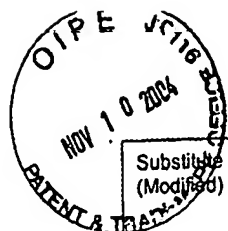
Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
dupl. DB	AJJ	Burnett et al. "Intrinsic Birefringence in 157 nm Materials." 2 <sup>nd</sup> International Symposium on 157 nm Lithography in Dana Point, CA, May 15, 2001.
dupl. DB	AKK	Burnett et al. "Intrinsic Birefringence in Calcium Fluoride and Barium Fluoride." Physical Review, B. Condensed Matter, American Institute of Physics. New York, US, Bd. 64, Nr. 24, pgs. 241102-1-241102-4, XP002218846, December 15, 2001.
dupl. DB	ALL	Pastrnak et al. "Optical Anisotropy of Silicon Single Crystals." Physical Review B (Solid State). US, Bd. 3, Nr. 8, pgs. 2567-2571, XP-001109107, April 15, 1971.
dupl. DB	AMM	Van Peski. Memo to Exposure Tool Manufacturers and Lens Designers re: Birefringence of Calcium Fluoride." XP-002218848, May 7, 2001.

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Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 17979-006002	Application No. 10/817,527
<b>Information Disclosure Statement by Applicant</b> (Use several sheets if necessary)  (37 CFR §1.98(b))		Applicant Daniel Krahmer et al.	
		Filing Date April 1, 2004	Group Art Unit 2872

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
<i>AD</i>	ANN	Van Peski. Memo to PAG Members re: Birefringence of Calcium Fluoride." XS-002218847, May 7, 2001.

Examiner Signature <i>Patricia Zuka</i>	Date Considered 11 APRIL 2005
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	Applicant <b>Daniel Krahmer et al.</b>		
	Filing Date <b>April 1, 2004</b>	Group Art Unit <b>2872</b>	

U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
<i>BB</i>	AA	5,652,745	7/29/1997	Noguchi et al.			
<i>BB</i>	AB	1,332,410	3/2/1920	Potts Oscero W.			
<i>BB</i>	AC	20040136084	07/15/2004	Unno et al.			
<i>BB</i>	AD	20040050318	03/18/2004	Sakai, Keita			
<i>BB</i>	AE	20040008348	01/15/2004	Kishikawa et al.			
<i>BB</i>	AF	20040156051	08/12/2004	Takeuchi et al.			
<i>BB</i>	AG	6,765,717	07/20/2004	Allan et al.			
<i>BB</i>	AH	20030168597	09/11/2003	Webb et al.			
<i>BB</i>	AI	6,782,075	8/24/2004	Pell			
<i>BB</i>	AJ	6,775,063	8/10/2004	Shiraishi			
<i>BB</i>	AK	6,788,389	9/7/2004	Fujishima, et al.			
<i>BB</i>	AL	20040089023	5/13/2004	Hiraiwa et al.			
<i>BB</i>	AM	20030197946	10/23/2003	Omura			
<i>BB</i>	AN	6,782,074	8/24/2004	Sakuma			


Foreign Patent Documents or Published Foreign Patent Applications								
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No
<i>BB</i>	AO	EP0103485	3/21/1984	Europe				
<i>BB</i>	AP	EP0857985	8/12/1998	Europe				X
<i>BB</i>	AQ	EP1063551	12/27/0000	Europe				X
<i>BB</i>	AR	DE19807120	8/26/1999	Germany				X
<i>BB</i>	AS	JP09166710	6/24/1997	Japan			x	
<i>BB</i>	AT	JP2001108801	4/20/2001	Japan			abstrt only	
<i>BB</i>	AU	JP2000331927	11/30/2000	Japan			abstrt only	
<i>BB</i>	AV	WO91/14189	9/19/1991	WIPO			ABS.	
<i>BB</i>	AW	WO00/70407	11/23/2000	WIPO			ABS.	
<i>BB</i>	AX	WO02/093201	11/21/2002	WIPO				

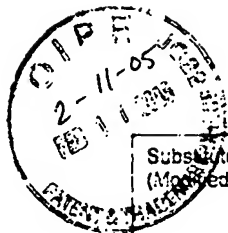
Examiner Signature <i>[Signature]</i>	Date Considered <b>11 APRIL 2005</b>
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		Filing Date April 1, 2004	Group Art Unit 2872

Foreign Patent Documents or Published Foreign Patent Applications								
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							Yes	No
BB	AY	WO03/003072	1/9/2003	WIPO	}	}		
BB	AZ	WO03/003429	1/9/2003	WIPO	}	}	ABS.	
BB	AAA	WO03/007045	1/23/2003	WIPO	}	}	ABS.	

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
BB	ABB	Burnett, J. H. et al., "Intrinsic Birefringence in calcium fluoride" Preprint handed out at 2 <sup>nd</sup> International Symposium on 157nm Lithography in Dana Point, California, May 15, 2001
BB	ACC	Mulkens, J. et al. "157-nm technology: Where are we today?" Optical Microlithography XV. 2002. Vol. 4691, 613-625. Proceedings of the SPIE-Int. Soc. Opt. Eng., Santa Clara, CA, US, March 5-8 2002
BB	ADD	Nogawa H., et al. "System design of a 157 nm scanner". Optical Microlithography XV. 2002. Vol. 4691, 602-612 Proceedings of the SPIE-Int. Soc. Opt. Eng., Santa Clara, CA, US, March 5-8 2002.
BB	AEE	Shiraishi, N. et al. "Progress of Nikon's F2 Exposure Tool Development". Proceedings of the SPIE, SPIE, Bellingham, VA, US March 5, 2002 Vol. 4691. March 5, 2002. 594-601.
BB	AFF	Burnett et al., "Preliminary Determination of an Intrinsic Birefringence in CaF <sub>2</sub> ", dated May 7, 2001, 2 <sup>nd</sup> International Symposium on 157nm Lithography in Dana Point, California, May 15, 2001

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Sheet 1 of 1

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<b>Information Disclosure Statement by Applicant</b> (Use several sheets if necessary)  (37 CFR §1.93(b))		Applicant <b>Krahmer et al.</b>	
		Filing Date <b>April 1, 2004</b>	Group Art Unit <b>2872</b>

U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
<i>BB</i>	AA	6,785,051	8/31/04	Allan	—	—	7-15-02

Foreign Patent Documents or Published Foreign Patent Applications								
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No
<i>BB</i>	AB	WO 01/50171 (translation of abstract only)	07/12/01	WIPO	—	—	X	

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
<i>BB</i>	AC	Wang et al. "Polarized Phase Shift Mask: Concept, Design, and Potential Advantages to Photolithography Process and Physical Design." Proceedings of SPIE vol. 4562, 21st Annual BACUS Symposium on Photomask Technology, March 2002, p. 406-417.
<i>BB</i>	AD	Hodgkinson, Ian. "Review of birefringent and chiral optical interference coatings." Optical Interference Coatings, Trends in Optics and Photonics vol. 63, 2001, p. FA1-FA3.
<i>BB</i>	AE	Band, Erster. Lexikon der Optik. 1999, p. 380-387. and certified copy of translation.
<i>BB</i>	AF	Burnett et al. "The Trouble with Calcium Fluoride." SPIE's OEMagazine, pp. 23-25, March 2002.
<i>BB</i>	AG	Matsuyama et al. "High NA and low residual aberration projection lens for DUV scanner." Optical Microlithography XV, Proceedings of SPIE, 4691, pp. 687-695, 2002. <i>Conf. 5 MAR 2002</i>
<i>BB</i>	AH	Matsuyama et al. "Microlithographic lens for DUV scanner." International Optical Design Conference, Proceedings of SPIE 4832, pp. 170174, 2002. <i>Conf. 3 JUNE 2002</i>
<i>BB</i>	AI	Matsumoto, et al. "Analysis of Imaging Performance Degradation." Optical Microlithography XVI, Proceedings of SPIE, 5040, pp. 131-138, 2003. <i>Conf. 25 FEB 2003</i>
<i>BB</i>	AJ	Owa et al. "Nikon F2 exposure tool development." Optical Microlithography XVI, Proceedings of SPIE, 5040, pp. 772-780, 2003. <i>Conf. 25 FEB 2003</i>
<i>BB</i>	AK	Chiba et al. "New generation projection optics for ArF lithography." Optical Microlithography XVI, Proceedings of SPIE, 4691, pp. 679686, 2002. <i>Conf. 5 MAR 2002</i>

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